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Abstracts

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The purpose of this department is to give sufficient information about the subject matter of each publication to enable users to decide whether to read it. It is our intention to cover all books, articles, and other materials in the field.

Books for abstracting and eventual review should be sent to this department. Materials should be sent to Duncan J. Melville, Department of Mathematics, Computer Science and Statistics, St. Lawrence University, Canton, NY 13617, U.S.A. (e-mail: dmelville@stlawu.edu)

Readers are invited to send reprints, autoabstracts, corrections, additions, and notices of publications that have been overlooked. Be sure to include complete bibliographic information, as well as transliteration and translation for non-European languages. We need volunteers willing to cover one or more journals for this department.

In order to facilitate reference and indexing, entries are given abstract numbers which appear at the end following the symbol #. A triple numbering system is used: the first number indicates the volume, the second the issue number, and the third the sequential number within that issue. For example, the abstracts for Volume 30, Number 1, are numbered: 30.1.1, 30.1.2, 30.1.3, etc.

For reviews and abstracts published in Volumes 1 through 13 there is an *author index* in Volume 13, Number 4, and a *subject index* in Volume 14, Number 1. An online index of all abstracts that have appeared in Historia Mathematica since 1974 is now available at http://historiamathematicaabstracts.questu.ca/.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Francine Abeles (Union, NJ), Chris Baltus (Oswego, NY), Janet L. Beery (Redlands, CA), Timothy B. Carroll (Ypsilanti, MI), Christopher Hammond (New London, CT), Patti Wilger Hunter (Santa Barbara, CA), Shelley Kandola (Canton, NY), Laura Martini, Kim Plofker, and Duncan J. Melville.

General

Afanas′ev, V. V., ed. *Proceedings of the 7th International Kolmogorov Lectures Held in Yaroslavl′, 2009* [in Russian]. Yaroslavl′: Yaroslavskiĭ Gosudarstvennyĭ Pedagogicheskiĭ Universitet imeni K. D. Ushinskogo, 2009, 455 pp. The Proceedings contains 67 papers, all in Russian. Those of more historical interest are listed separately as: #39.3.40;

0315-0860/$ - see front matter
doi:10.1016/j.hm.2012.04.004

#39.3.61; #39.3.75; #39.3.77; #39.3.112; #39.3.139; #39.3.160; #39.3.176; and #39.3.181. (DJM) #39.3.1

Albrecht, Andrea. *See* #39.3.17.

Alsina, Claudi; and Nelsen, Roger B. *Icons of Mathematics. An Exploration of Twenty Key Images* (*The Dolciani Mathematical Expositions* **45**). Washington, DC: Mathematical Association of America, 2011, xviii + 327 pp. An accessible exploration of twenty elementary geometrical diagrams leavened with historical background and context. See the review by E. J. Barbeau in *Mathematical Reviews* 2816682 (**2012d**:00001). (DJM) #39.3.2

Bressoud, David M. Historical reflections on teaching the fundamental theorem of integral calculus. *American Mathematical Monthly* **118** (2) (2011), 99–115. The author traces the history of the fundamental theorem of integral calculus, from its earliest origins through to its modern incarnation in textbooks. He argues that awareness of the stages of development and presentation of the theorem gives insights on how to teach the result to current students. (DJM) #39.3.3

Byrne, Oliver. *The First Six Books of the Elements of Euclid*. Köln: Taschen, 2010, 300 pp. A reprint of Byrne's 1847 illustrated edition of Euclid's *Elements*, distinctive for the fact that it replaces much of the original text with multi-colored diagrams and symbols. The main book is accompanied by a 96 page booklet featuring an essay by Werner Oechslin, presented in German, French, and English. See the review by Victor V. Pambuccian in *Zentralblatt MATH* 1228.01053. (CH) #39.3.4

Español González, Luis. Comentarios históricos sobre el teorema de Rolle con referencias a la matemática española hacia 1911 [Historical comments on Rolle's theorem with references to Spanish mathematics back to 1911]. *La Gaceta de la Real Sociedad Matemática Española* **14** (1) (2011), 167–178. A far-reaching examination of Rolle's theorem and its history, from the seventeenth to the twentieth centuries. See the review by R. W. van der Waall in *Zentralblatt MATH* 1230.01012. (CH) #39.3.5

Ferreira, Fernando; Löwe, Benedikt; Mayordomo, Elvira; and Mendes Gomes, Luis, eds. *Programs, Proofs, Processes. Proceedings of the 6th Conference on Computability in Europe (CiE 2010) held at the University of Azores, Ponta Delgada, June 30–July 4, 2010* (*Lecture Notes in Computer Science* **6158**). Berlin: Springer, 2010, 450 pp. Proceedings of a compuatbility conference from 2010. The papers with some historical content are abstracted separately as: #39.3.68; #39.3.98; #39.3.118; and #39.3.138. (DJM) #39.3.6

Fischer, Hans. *A History of the Central Limit Theorem. From Classical to Modern Probability Theory* (*Sources and Studies in the History of Mathematics and Physical Sciences*). New York: Springer, 2011, xvi + 402 pp. A substantially revised version of a book that was originally published in German in 2000 [*Die verschiedenen Formen und Funktionen des zentralen Grenzwertsatzes in der Entwicklung von der klassischen zur modernen Wahrscheinlichkeitsrechnung*]. The author traces the development of ideas on the convergence of the distribution of sums of independent random variables to the normal distribution from the early 1800s to the 1940s. See the review by Andrew R. Wade in *Mathematical Reviews* 2743162 (**2012c**:60004). (DJM) #39.3.7

Kleiner, Israel. *Excursions in the History of Mathematics*. Basel: Birkhäuser, 2012, xxi + 347 pp. Intended primarily for teachers of mathematics, this book provides an historical overview of several important topics within the discipline. The first three sections

pertain respectively to number theory, calculus/analysis, and proof. The fourth section offers suggestions for historically-oriented mathematics courses. The fifth section consists of biographies of selected mathematicians: Dedekind, Euler, Gauss, Hilbert, and Weierstrass. See the review by Roman Murawski in *Zentralblatt MATH* 1230.01003. (CH) #39.3.8

León Cardenal, Edwin. La Gema de la Reina: Una breve revisión histórica de la ley de reciprocidad cuadrática [The Queen's Jewel: A brief history of the quadratic reciprocity law]. *Lecturas Matemáticas* **30** (1) (2009), 17–27. A brief history of the quadratic reciprocity law. Beginning with Diophantus and Fermat, the emphasis is on the work of Euler, Legendre, Gauss and Eisenstein. See the review by Doru Ştefănescu in *Mathematical Reviews* 2725157 (**2012c**:01008). (DJM) #39.3.9

Löwe, Benedikt. *See* #39.3.6.

Malesios, Chrisovalandis. *See* #39.3.12.

Maligranda, Lech. The AM-GM Inequality is equivalent to the Bernoulli Inequality. *The Mathematical Intelligencer* **34** (1) (2012), 1–2. A simplified proof based on earlier work by the author and by M.D. Hirschhorn (this journal **29** (2007), p. 7) that the arithmetic mean inequality, aka the Cauchy Inequality, and the geometric mean inequality, aka the Bernoulli Inequality, are equivalent. (FA) #39.3.10

Mayordomo, Elvira. *See* #39.3.6.

Mendes Gomes, Luis. *See* #39.3.6.

Montelle, Clemency. *Chasing Shadows: Mathematics, Astronomy, and the Early History of Eclipse Reckoning*. Baltimore, MD: Johns Hopkins University Press, 2011, 424 pp. Solar and lunar eclipses are significant astronomical events. In this book, the author traces the responses of four early cultures, the ancient Near East, Greece, India, and the Islamic Near East, to the challenge of understanding, and predicting these phenomena. See the review by Christopher Linton in *Notices of the American Mathematical Society* **59** (3) (2102), 430–433. (DJM) #39.3.11

Nelsen, Roger B. *See* #39.3.2.

Oechslin, Werner. *See* #39.3.4.

Panaretos, John; and Malesios, Chrisovalandis. Influential mathematicians: Birth, education, and affiliation. *Notices of the American Mathematical Society* **59** (2) (2012), 274–286. DOI: http://dx.doi.org/10.1090/noti785. A statistical approach to the methodological and historiographical issue of identification of mathematicians by nationality or background, especially in an era of increased labor mobility. (DJM) #39.3.12

Quinn, Frank. A revolution in mathematics? What really happened a century ago and why it matters today. *Notices of the American Mathematical Society* **59** (1) (2012), 31–37. The author argues that the move of "core" mathematics to a set theoretic basis and more rigorous logical argument not only made it less comprehensible to outsiders, but also distanced it from science and applications, possibly to its future detriment. (DJM) #39.3.13

Rogers, Leo F. Mathematics education in Scotland: A brief history. *International Journal for the History of Mathematics Education* **6** (2) (2011), 23–54. A broad history of the institutions and major players in mathematics education in Scotland, from the late medieval

period into the 21st century. In the mid to late 1700's, arithmetic became standard in primary schools; at the secondary level, new schools and new curricula appeared, particularly the commercial academies, where the curriculum included algebra through theory of equations, Euclid's geometry, plane and spherical trigonometry, and analytic geometry. (CB) #39.3.14

Roy, Ranjan. *Sources in the Development of Mathematics: Series and Products from the Fifteenth to the Twenty-first Century*. Cambridge: Cambridge University Press, 2011, xix + 974 pp. An overview of the history of infinite series and products, from fifteenth century India to the present day. The author relies heavily on primary sources, using original notation whenever possible. Each chapter includes exercises and bibliographical notes. See the review by Roman Murawski in *Zentralblatt MATH* 1228.01001. (CH) #39.3.15

Stahl, Saul. *Real Analysis. A Historical Approach*, 2nd ed. Hoboken, NJ: John Wiley & Sons, 2011, xv + 293 pp. This is the second edition of Stahl's 1999 book on real analysis. A chapter on the Riemann integral has been added with respect to the first edition. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1229.01001. (LM) #39.3.16

Weber, Anne-Gaëlle; and Albrecht, Andrea. Évariste Galois ou le roman du mathématicien [Évariste Galois or the mathematician's novel]. *Revue d'Histoire des Mathématiques* **17** (2) (2011), 403–435. A comparative analysis of Galois' literary afterlife and the commingling of historical and romantic narratives. (DJM) #39.3.17

Mesopotamia

Høyrup, Jens. *L'algèbre au temps de Babylone: Quand les mathématiques s'écrivaient sur de l'argile* [*Algebra in the Time of Babylon: When Mathematics was Written on Clay*]. Paris: Vuibert, 2001, 176 pp. Deploying numerous examples from many Old Babylonian texts, Høyrup explains his view of the geometric basis of Babylonian algebra, in contrast to both proof-based algebraic reasoning and simple following of recipe-style algorithms. (DJM) #39.3.18

See also #39.3.11.

India

Bhattacharyya, R. K. Brahmagupta: The ancient Indian mathematician, in #39.3.31, pp. 185–192. An account of the chief contributions of the seventh-century CE mathematician and astronomer Brahmagupta, particularly his solutions to the so-called "Pell's equation" and related problems. See the review by A. Arvanitoyeorgos in *Zentralblatt MATH* 1223.01004. (KP) #39.3.19

Dershowitz, Nachum; and Reingold, Edward M. Indian calendrical calculations, in #39.3.31, pp. 1–31. Describes in detail the underlying principles and several variants of the complicated Indian lunisolar calendar. See the review by T. Thrivikraman in *Zentralblatt MATH* 1227.01008. (KP) #39.3.20

Gupta, R. C. India's contributions to Chinese mathematics through the eighth century C.E., in #39.3.31, pp. 33–44. A reprint under a different title of the author's article entitled

"Sino-Indian interaction and the great Chinese Buddhist astronomer-mathematician I-Hsing (A.D. 683–727)". See the review by Andrea Bréard in *Zentralblatt MATH* 1231.01002. (KP) #39.3.21

Heeffer, Albrecht. The reception of ancient Indian mathematics by Western historians, in #39.3.31, pp. 135–152. Surveys the treatment of Indian mathematics, particularly algebra, in Western histories of mathematics in the early modern and modern period, pointing out the historiographic biases that led to over-emphasizing the possibility of Greek influence. See the review by Svitlana P. Rogovchenko in *Zentralblatt MATH* 1222.01006. (KP) #39.3.22

Kak, Subhash. The golden mean and the physics of aesthetics, in #39.3.31, pp. 111–119. The article looks at some variants of Fibonacci sequences relevant to musicology, in light of medieval Indian combinatorics and music. (KP) #39.3.23

Knudsen, Toke Lindegaard. On the application of areas in the Śulbasūtras, in #39.3.31, pp. 63–73. Examines late-Vedic Indian techniques for constructing and dissecting geometric figures preserved in the texts on ritual altar construction known as the Śulbasūtras. The author explores similarities between some of these techniques and ancient Babylonian "application of areas" or "geometrical algebra" procedures. See the review by Leon Harkleroad in *Zentralblatt MATH* 1225.01015. (KP) #39.3.24

Mallayya, V. Madhukar. The Indian mathematical tradition with special reference to Kerala: Methodology and motivation, in #39.3.31, pp. 153–170. The article describes the historical context and some of the notable achievements of the renowned "Kerala school" in southwest India in the second millennium, particularly in the discovery and ingenious demonstration of significant results in trigonometry, infinite series, and infinitesimal methods. See the review by Fiacre O'Cairbre in *Zentralblatt MATH* 1227.01010. (KP) #39.3.25

Man Mohan. *See* #39.3.31.

Nikolantonakis, Kostas. *See* #39.3.34.

Ôhashi, Yukio. Mainland southeast Asia as a crossroads of Chinese astronomy and Indian astronomy, in #39.3.31, pp. 193–200. The exact sciences of pre-modern southeast Asia have received comparatively little attention from historians. This brief but important article draws upon analyses of various calendar systems to evaluate the comparative influence of Chinese and Indian scientific traditions in this region. (KP) #39.3.26

Pandey, G. S. Divisions of time and measuring instruments of Varāhamihira, in #39.3.31, pp. 75–110. The author explores ancient and medieval time units in Indian exact sciences, based on the inference that the earliest ancient texts treating such units in detail are some five thousand years old. Timekeeping instruments such as water-clocks and gnomons are also discussed. (KP) #39.3.27

Reingold, Edward M. *See* #39.3.20.

Sarma, Sreeramula Rajeswara. Mathematical literature in the regional languages of India, in #39.3.31, pp. 201–211. The vast majority of historical study of Indian mathematics treats the Sanskrit "academic" mathematical tradition, but as this article explains, there is a great deal of important material preserved in Indo-Aryan and Dravidian vernaculars and popular pedagogy that must be examined if the evolution of mathematics in South Asia is to be fully understood. (KP) #39.3.28

Singh, Shyam Lal. Piṇgala binary numbers, in #39.3.31, pp. 121–134. The ancient Sanskrit prosodist Piṇgala presented in short aphorisms a number of combinatorial results involving the ways of combining Sanskrit "light" and "heavy" syllables to form various poetic meters. The article uses the concept of binary numbers to interpret and explain these results. See the review by Hans Fischer in *Zentralblatt MATH* 1230.01005. (KP) #39.3.29

Tularam, Gurudeo A. Vedas and the development of arithmetic and algebra. *Journal of Mathematics and Statistics* **6** (4) (2010), 468–480. The author situates the development of ancient Indian arithmetic and algebra in the period from approximately 6000 to 600 BCE and identifies this period as "Vedic", i.e., contemporary with Old Indo-Aryan literature including the sacred Veda texts and ancillary works. He argues that the spiritual and philosophical inquiries attested in this literature were instrumental in developing mathematical concepts and methods that later strongly influenced mathematics in the rest of the world. See the review by S. L. Singh in *Zentralblatt MATH* 1227.01012. (KP) #39.3.30

Wen-Lin, Li. *See* #39.3.33.

Yadav, B.S.; and Man Mohan. *Ancient Indian Leaps into Mathematics*. New York: Birkhäuser/Springer, 2011, xx + 217 pp. This volume is a collection of articles listed or abstracted separately as: #39.3.19; #39.3.20; #39.3.21; #39.3.22; #39.3.23; #39.3.24; #39.3.25; #39.3.26; #39.3.27; #39.3.28; #39.3.29; #39.3.32; #39.3.33; and #39.3.34. (KP) #39.3.31

Yadav, B.S. André Weil: His book on number theory and Indian references, in #39.3.31, pp. 55–61. Focuses on the wide-ranging treatment of the history of number theory in Weil's 1987 work on the subject, with especial attention to Weil's description of medieval Indian mathematics. See the review by Franka Miriam Bruckler in *Zentralblatt MATH* 1223.01020. (KP) #39.3.32

Yao-Yong, Duan; and Wen-Lin, Li. The influence of Indian trigonometry on Chinese calendar-calculations in the Tang dynasty, in #39.3.31, pp. 45–54. This groundbreaking article compares aspects of Indian and Chinese mathematical astronomy and concludes that the Indian version of ancient/medieval spherical astronomy with trigonometric functions and sexagesimal units did not have much influence on its Chinese counterpart. See the review by Jean-Claude Martzloff in *Zentralblatt MATH* 1225.01009. (KP) #39.3.33

Yao-Yong, Duan; and Nikolantonakis, Kostas. The algorithm of extraction in Greek and Sino-Indian mathematical traditions, in #39.3.31, pp. 171–184. Presents a survey with detailed examples of algorithmic approaches to extracting and approximating square roots in Hellenistic, Chinese and Indian mathematics. See the review by Jean-Claude Martzloff in *Zentralblatt MATH* 1227.01006. (KP) #39.3.34

See also #39.3.11.

China

Chemla, Karine; and Ma Biao. Interpreting a newly discovered mathematical document written at the beginning of the Han Dynasty in China (before 157 B.C.E.) and excavated from Tomb M77 at Shuihudi. *SCIAMVS* **12** (2011), 159–191. A critical edition of seven of 216 bamboo strips comprising a book called *Suanshu* [*Mathematical procedures*] recently

excavated from a tomb in Hubei province. The rest of the work is thus far unpublished. (DJM) #39.3.35

Ma Biao. *See* #39.3.35.

Robins, Dan. The later Mohists and logic. *History and Philosophy of Logic* **31** (3) (2010), 247–285. This article contains a study and a full annotated English translation of the Later Mohists's Lesser Selection (Xiaoqu), a text from Chinese antiquity aiming at developing some kind of logic. The reviewer states that the new interpretation in the article is particularly interesting and convincing. See the review by Jean-Claude Martzloff in *Zentralblatt MATH* 1227.01005. (TBC) #39.3.36

Islamic/Islamicate

Bellver, José. Jābir b. Aflaḥ on the limits of solar and lunar eclipses. *SCIAMVS* **12** (2011), 3–27. Bellver discusses Jābir b. Aflaḥ's criticism of Ptolemy's procedures for determining lunar mean position from apparent syzygies in Book V of Jābir's 12th-century treatise *Iṣlāḥ al-Majisṭī*, or *Correction of the Almagest*. The article includes an edition and translation of the relevant text. (DJM) #39.3.37

Hodges, Wilfrid. Ibn Sīnā on analysis: 1. Proof search. Or: Abstract state machines as a tool for history of logic, in Blass, Andreas, et al., eds, *Fields of Logic and Computation. Essays Dedicated to Yuri Gurevich on the Occasion of His 70th Birthday* (*Lecture Notes in Computer Science* **6300**) (Berlin: Springer, 2010), 354–404. By showing that Ibn Sīnā's book *Qiyās* contains all the essential ingredients for an abstract state machine, the author proves that he did, in fact, give a proof search algorithm for syllogisms. The paper includes a translation of the relevant Arabic passage. (DJM) #39.3.38

Raynaud, Dominique. Abū al-Wafā' Latinus? A study of method. *Historia Mathematica* **39** (1) (2012), 34–83. A detailed analysis of the transmission to Europe of Abū al-Wafā's *Kitāb fī mā yaḥtāju al-ṣāni' min al-a'māl al-handasiyya* [*Book on Those Geometric Constructions Which are Necessary for Craftsmen*]. The treatise includes 171 problems in geometry, of which some two-thirds appear in Renaissance works. Despite this, the author argues for an independent development in Europe and finds Abū al-Wafā's book to have had little impact. (DJM) #39.3.39

Rozhanskaya, M. M. On some Arabic mathematical manuscripts in the libraries of St. Petersburg [in Russian], in #39.3.1, pp. 341–346. #39.3.40

See also #39.3.11; and #39.3.47.

Other Non-Western

Dehaene, Stanislas; Izard, Véronique; Pica, Pierre; and Spelke, Elizabeth. Core knowledge of geometry in an Amazonian indigene group. *Science* **311** (5759) (2006), 381–384. The authors used two nonverbal tests to probe the conceptual primitives of geometry in the Munduruku, an isolated Amazonian indigene group. (LM) #39.3.41

Izard, Véronique. *See* #39.3.41.

Pica, Pierre. *See* #39.3.41.

Spelke, Elizabeth. *See* #39.3.41.

Antiquity

Acerbi, Fabio. The geometry of burning mirrors in Greek antiquity. Analysis, heuristic, projections, lemmatic fragmentation. *Archive for History of Exact Sciences* **65** (5) (2011), 471–497. The author is interested in the proofs, assumptions, and the likely discovery method of several results in the geometry of burning mirrors. W. Knorr's supposition, that the focal property of the parabola was guessed, is criticized, and the author offers an alternative interpretation relying on heuristic analysis. See the review by Victor V. Pambuccian in *Zentralblatt MATH* 1228.01003. (TBC) #39.3.42

Cuomo, Serafina. Exploring ancient Greek and Roman numeracy. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 1–12. Outlines the author's current and future investigations into the role and level of quantitative skills in ancient Greek and Roman society. Gives examples of the wide range of evidence from which she draws (e.g., mathematical texts, legal documents, archaeological artifacts) and proposes some general research questions. (PWH) #39.3.43

Djebbar, Ahmed. *See* #39.3.47.

Netz, Reviel, et al., eds. *The Archimedes Palimpsest. Volume 1: Catalogue and Commentary. Volume 2: Images and Transcriptions* (*The Archimedes Palimpsest Publications*). Cambridge: Cambridge University Press, 2011, 350 pp./vol. 1, 336 pp./vol. 2. Contains facsimiles and transcriptions of three of the Greek text collections preserved in the Archimedes Palimpsest, a medieval Byzantine prayer book written over earlier manuscripts. The first of the collections comprises seven mathematical texts by Archimedes, including the unique known copy of the *Method* for determining areas and volumes of figures by considering infinitesimally thin slices of them. (KP) #39.3.44

Saito, Ken. *See* #39.3.45.

Sidoli, Nathan; and Saito, Ken. Comparative analysis in Greek geometry. *Historia Mathematica* **39** (1) (2012), 1–33. In the view of the authors, comparative analysis, that is, analysis of a relation with respect to greater than, equality, or less than, forms a distinct type of theoretic analysis, different from standard theoretic analysis and thus has a different logical structure. The authors also suggest that these different forms of argument for different types of theorems suggest the existence of a "body of heuristic techniques" in Greek geometry. (DJM) #39.3.45

Sidoli, Nathan. Heron of Alexandria's date. *Centaurus* **53** (1) (2011), 55–61. The author argues that the eclipse recorded in *Dioptra* should not be taken as a careful personal observation by Heron, and thus cannot be used as a means of dating him. (DJM) #39.3.46

Vitrac, Bernard; and Djebbar, Ahmed. Le Livre XIV des *Éléments* d'Euclide: versions gecques et arabes (première partie) [Book XIV of Euclid's *Elements*: Greek and Arabic versions (First part)]. *SCIAMVS* **12** (2011), 29–158. A thorough exploration of the three known Greek versions of Book XIV of the *Elements*. The article includes the Greek text and French translation along with extensive commentary and analysis. A future part will compare the Arabic manuscripts. (DJM) #39.3.47

Zaĭtsev, E. A. The idea of opposites and the characteristic features of demonstration in early Pythagorean mathematics [in Russian]. *Istoriko-Matematicheskie Issledovaniya* (2) **13** (48) (2009), 217–245, 379. The author argues that early Pythagorean mathematics with

numbers represented as arrangements of pebbles stressed the idea of opposites (as in even and odd) and compares it with the Euclidean approach. (DJM) #39.3.48

See also #39.3.4; #39.3.11; and #39.3.79.

Middle Ages

Burnett, Charles. *Numerals and Arithmetic in the Middle Ages* (*Variorum Collected Studies Series* **967**). Aldershot: Ashgate, 2010, x + 370 pp. A collection of 11 of Burnett's papers on issues related to the reception of Hindu-Arabic numerals in medieval Europe. See the review by Glen R. Van Brummelen in *Mathematical Reviews* 2789893 (**2012c**:01014). (DJM) #39.3.49

Hannah, John. Conventions for recreational problems in Fibonacci's *Liber Abbaci*. *Archive for History of Exact Sciences* **65** (2) (2011), 155–180. This paper is concerned with Leonardo's construction of the problems. It is suggested that Leonardo had no general formula or algorithm behind the construction of his problems. See the review by Albert C. Lewis in *Zentralblatt MATH* 1227.01013. (TBC) #39.3.50

Renaissance

Alexanderson, Gerald L; and Greenwalt, William S. About the cover: Billingsley's Euclid in English. *Bulletin of the American Mathematical Society* **49** (1) (2012), 163–167. On the (partly recycled) title page of Sir Henry Billingsley's translation of Euclid's *Elements* of 1570. (DJM) #39.3.51

Deschauer, Stefan. Zur Bedeutung der Nürnberger Rechenmeister in der Zeit der Renaissance—zwischen Dominanz und fehlendem Einfluss [On the significance of Nuremberg arithmeticians during the Renaissance—between dominance and lack of influence]. *Sudhoffs Archiv* **94** (1) (2010), 99–110. Surveys the known "Rechenmeisters" or teachers of practical computation in fifteenth- and sixteenth-century Nuremberg as well as their published output in the sixteenth century. The article points up the importance of Nuremberg printers for the dissemination of reckoning books. See the review by Hans Fischer in *Zentralblatt MATH* 1230.01006. (KP) #39.3.52

Ekholm, Karin J. Tartaglia's ragioni: A Maestro d'abaco's mixed approach to the bombardier's problem. *The British Journal for the History of Science* **43** (2) (2010), 181–207. Analyzes the four "ragioni" or modes of reasoning enumerated by Tartaglia in his discussion of cannonball trajectories in *La Nova Scientia* (1537) as "physical and geometrical reasoning", "demonstrative geometrical reasoning", "Archimedean reasoning", and "algebraic reasoning". The analysis draws on the history of contemporary "abacus" or arithmetic/algebra techniques in sorting out the various strands of theoretical and computational mathematical knowledge that Tartaglia wove together in his investigations. See the review by W. Kaunzner (in German) in *Zentralblatt MATH* 1227.01015. (KP) #39.3.53

Gabriel, Peter. Ein gemeyn leycht buechlein. Zur Didaktik in Adam Ries' zweitem Rechenbuch im Vergleich zu Widmanns "Behende vnd hubsche Rechenung" [Ein gemeyn leycht buechlein. On the Didactics of Adam Ries' Second Arithmetic Textbook in Comparison with Widmann's "Behende vnd hubsche Rechenung"]. *Internationale Zeitschrift für*

Geschichte und Ethik der Naturwissen- schaften, Technik und Medizin. (N.S.) **18** (4) (2010), 469–496. The author discusses the didactic benefits of Adam Ries' book "Rechnung auf der linien vnd federn" (*Calculations with Computing Table and Numerals*) by comparing it to Johannes Widman's contemporary textbook "Behende vnd hubsche Rechnung" (*Fast and Fine Calculations*). See the review by Silke Göbel in *Zentralblatt MATH* 1230.01029. (LM) #39.3.54

Goulding, Robert. *Defending Hypatia: Ramus, Savile, and the Renaissance Rediscovery of Mathematical History* (*Archimedes: New Studies in the History and Philosophy of Science and Technology* **25**). New York: Springer, 2010, xx + 201 pp. On how Petrus Ramus (1515–1572) and Henry Savile (1549–1622) used history of mathematics to promote particular views of mathematics, utilitarian for Ramus, and demonstrative for Savile. See the review by Henry Zepeda in *Historia Mathematica* **39** (1) (2012), 109–111. (DJM) #39.3.55

Greenwalt, William S. *See* #39.3.51.

Péoux, Gérald. Atmospheric refraction and the Ramus circle: Aspects of a late sixteenth-century dispute. *Annals of Science* **67** (4) (2010), 457–484. Observational astronomy in this period was concerned with the problem of understanding atmospheric refraction and its optical effects on observed celestial positions. The paper discusses the dispute on the subject that centered around associates of the French philosopher and mathematician Petrus Ramus, particularly concerning the *Opticae thesaurus* of Ramus's assistant Friedrich Risner. See the review by Roman Duda in *Zentralblatt MATH* 1230.01007. (KP) #39.3.56

Williams, Jack. *Robert Recorde: Tudor Polymath, Expositor and Practitioner of Computation*. Berlin: Springer, 2011, xxiii + 265 pp. An analysis of the life and work of Robert Recorde, a sixteenth century Welsh polymath. The author thoroughly examines Recorde's intellectual achievements, particularly his legacy to modern mathematics and computer science. See the review by Roman Murawski in *Zentralblatt MATH* 1230.01010. (CH) #39.3.57

17th century

Cardil, Roberto. Kepler: The volume of a wine barrel. *Loci: Convergence* (June 2010), 9 pp., electronic only. DOI: 10.4169/loci003499. In his analysis of volumes of wine barrels, Kepler used ideas that would become important in differential and integral calculus. Use this article's animated visual imagery to help share Kepler's ideas with your students. (JLB) #39.3.58

Ducheyne, Steffen. The inferential and representational techniques in Galileo's models for uniformly accelerated motion. *Epistemologia* **33** (2) (2010), 257–280. This paper analyzes Galileo's scientific methodology which enabled him to obtain his results on uniform and naturally accelerated motion and provides a systematic overview of Galileo's inferential strategies. See the review by Antonín Slavík in *Zentralblatt MATH* 1230.01011. (LM) #39.3.59

Fried, Michael N. *Edmond Halley's Reconstruction of the Lost Book of Apollonius's Conics: Translation and Commentary*. Berlin: Springer, 2011, x + 132 pp. A translation of Halley's reconstruction of Book VIII of Apollonius' *Conics*, along with explanatory notes and

commentary. See the review by H. Guggenheimer in *Zentralblatt MATH* 1230.01013. (CH) #39.3.60

Gorodetskiĭ, M. L.; Simonov, R. A.; and Khromov, O. R. Yaroslav treatise on Old-Russian mathematics and astronomy at the end of the 17th century to the beginning of the 18th century [in Russian], in #39.3.1, pp. 49–59. #39.3.61

Hernández Rodríguez, Omar. *See* #39.3.63.

Jullien, Vincent. *Philosophie naturelle et géométrie au XVIIe siècle* [*Natural Philosophy and Geometry in the 17th Century*] (*Sciences, Techniques et Civilisations du Moyen Âge à l'Aube des Lumières* **9**). Paris: Champion, 2006, 477 pp. This book consists of twelve papers examining the interrelationship between natural philosophy and science in the 17th century. Several of the main themes concerning the major changes in the natural sciences and in mathematics are discussed, such as gravity theory, the extensions of Euclidean geometry, the birth of algebraic geometry, the method of indivisibles. (LM) #39.3.62

Khromov, O. R. *See* #39.3.61.

López Fernández, Jorge; and Hernández Rodríguez, Omar. Teaching the Fundamental Theorem of Calculus: A historical reflection. *Loci: Convergence* (January 2012), 10 pp., electronic only. DOI: 10.4169/loci003803. An argument that the teaching of elementary integration should better reflect its historical development. (JLB) #39.3.63

López Pellicer, Manuel. El último teorema de Fermat: un enigma entre el cálculo e ideas desde 1630 a 1994 [Fermat's Last Theorem: An enigma between calculus and ideas from 1630 to 1994]. *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales (España)* **103** (2) (2009), 269–278. A survey of the mathematicians who made advances, whether on the problem itself or in general, while trying to solve Fermat's last theorem. See the review by Capi Corrales-Rodrigáñez in *Mathematical Reviews* 2790015 (**2012b**:01008). (DJM) #39.3.64

Nauenberg, Michael. Proposition 10, Book 2, in the *Principia*, revisited. *Archive for History of Exact Sciences* **65** (5) (2011), 567–587. In the second edition of the *Principia* Newton corrected an error in the first edition. However the author states that there are also problems in Newton's corrected version in the second edition that have been ignored in the past and which are discussed in detail in this article. See the review by Grozio Stanilov in *Zentralblatt MATH* 1227.01002. (TBC) #39.3.65

Navarro Loidi, Juan. Dávila Orejón y Gascon, military engineers and mathematics in Cuba in the second half of XVIIth century [in Spanish]. *Revista Ciencias Matemáticas* **22** (2004) (2) (2009), 156–173. The article surveys professional mathematical knowledge particularly among military leaders and engineers in seventeenth-century Cuba. See the review by V. N. Saliĭ in *Zentralblatt MATH* 1230.01015. (KP) #39.3.66

Pelczar, Andrzej. Once more about Brożek [in Polish]. *Antiquitates Mathematicae* **3** (2009), 9–19. The author discusses the supposed Polish form of the Latin name Broscius, family name of Ioannes Broscius (1585–1652), mathematician and astronomer, professor at Kraków University. It argues about probable versions of his name and adds some remarks on his date of birth. (LM) #39.3.67

Pombo, Olga. Three roots of Leibniz's contribution to the computational conception of reason, in #39.3.6, 352–361. Argues that Leibniz's contribution to computational concep-

tion of reason depends upon three backgrounds: the 13th century tradition of combinatorial reasoning; 17th century attempts to construct artificial languages; and the Hobbesian conception of reason. (DJM) #39.3.68

Simonov, R. A. *See* #39.3.61.

Tatarkiewicz, Krzysztof. Br(z)o. . .(?) – not a review and not a polemic [in Polish]. *Antiquitates Mathematicae* **3** (2009), 21–25. This article debates on the Polish version of the family name that the mathematician Johannes Broscius (1585–1652) was using and on the doubts about the exact date of his birth. (LM) #39.3.69

See also #39.3.5.

18th century

Alexanderson, Gerald L. About the cover: The cycloid and Jean Bernoulli. *Bulletin of the American Mathematical Society* **48** (4) (2011), 525–530. The author explains details of the frontispiece and title page of Jean Bernoulli's *Opera Omnia* from 1742, with a special emphasis on the depicted cycloid as the solution of the famous brachistochrone problem. See the review by Olaf Teschke in *Zentralblatt MATH* 1228.01011. (TBC) #39.3.70

Borgato, Maria Teresa. D'Alembert e l'istituto di Bologna [D'Alembert and the Institute of Bologna]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 339–361. The review quotes the abstract of this paper: "D'Alembert was associated with the Academy of Sciences of the Institute of Bologna. His work appears, in general, to have had a limited influence on the memoirs published in the *Commentarii* even if almost all of d'Alembert's works were available to the Bolognese academicians in the second half of the 18th century." See the review by R. W. van der Waall in *Zentralblatt MATH* 1227.01017. (TBC) #39.3.71

De Risi, Vincenzo. *See* #39.3.79.

Ferlin, Fabrice. Les lunettes achromatiques: un enjeu européen dans la deuxième moitié du 18e siècle [The achromatic telescopes: A European theme in the second part of the 18th century]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 221–237. This overview of the 18th century invention and production of achromatic lenses in Europe focuses on the development of their theory. See the review by Albert C. Lewis in *Zentralblatt MATH* 1227.01018. (TBC) #39.3.72

Fonteneau, Yannick. D'Alembert et Daniel Bernoulli face au concept de travail mécanique [D'Alembert and Daniel Bernoulli facing the concept of mechanical work]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 201–220. Argues that the *Hydrodynamica* of Bernoulli and the *Traité du dynamique* of d'Alembert used different and inadequately realized ideas of "mechanical work", due to their neglect of practical engineering perspectives on it. The author holds that the concept was not clearly defined until the work of Coriolis in 1829. See the review by Roman Duda in *Zentralblatt MATH* 1230.01016. (KP) #39.3.73

Galuzzi, Massimo. Paolo Frisi, d'Alembert et le milieu scientifique de Milan [Paolo Frisi, d'Alembert and the scientific environment of Milan]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 321–338. An examination of the intellectual environment of seventeenth century Milan, focusing on the accomplishments of Paolo Frisi and his

contributions to the work of d'Alembert. See the review by Carlo Cattani in *Zentralblatt MATH* 1229.01118. (CH) #39.3.74

Konovalova, L. V. Development of mathematical methods in the theory of ship building in the works of Euler [in Russian], in #39.3.1, pp. 356–362. #39.3.75

Passeron, Irène. La correspondance de d'Alembert. Un réseau européen? [D'Alembert's correspondence. A European network?]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 137–153. The article discusses D'Alembert's correspondence with the European intellectuals of the time. See the review by R. W. van der Waall in *Zentralblatt MATH* 1227.01019. (TBC) #39.3.76

Pavlidis, V. D. Some problems in the theory of trigonometric series in the investigations of L. Euler [in Russian], in #39.3.1, pp. 351–356. #39.3.77

Phili, Christine. D'Alembert et Lagrange. Deux points de vue différents concernant les fondements de l'analyse [D'Alembert and Lagrange. Two different viewpoints concerning the fundamentals of analysis]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 293–307. For D'Alembert calculus needed philosophical and metaphysical foundations (he refused the actual infinite in favor of a potential infinite). For Lagrange, on the other hand, calculus had to be handled in a purely algebraic way–thinking that any function could be developed into a Taylor series. See the review by Davide Bondoni in *Zentralblatt MATH* 1226.01006. (TBC) #39.3.78

Saccheri, Gerolamo. *Euclide vendicato da ogni neo* [*Euclid Vindicated of Every Flaw*]. Pisa: Edizioni della Normale, 2001, 2 vols, 148 + 252 pp. Edited by Vincenzo De Risi. A new edition of Saccheri's *Euclides Vindicatus* with both Latin original and Italian translation, accompanied by an introduction and commentary by the editor. See the review by Massimo Galuzzi in *Historia Mathematica* **39** (1) (2012), 107–108. (DJM) #39.3.79

Simonič, Aleksander. The Basel problem [in Slovenian; English summary]. *Obzornik za Matematiko in Fiziko* **58** (1) (2011), 1–11. Euler's approach to solving the Basel problem, detailing both his first solution and later completion of the proof. (DJM) #39.3.80

See also #39.3.61; #39.3.64; and #39.3.70.

19th century

Abdeljaouad, Mahdi. The first Egyptian modern mathematics textbook. *International Journal for the History of Mathematics Education*, **6** (2) (2011), 1–22. The first Egyptian preparatory school (1821) for modern technical education required textbooks. The article closely examines an Arabic edition of an algebra text. Its provenance is traced, through an Italian translation, to Bézout's *Cours de mathématiques à l'usage des Gardes du Pavillon et de la Marine*. Traditional Arabic terminology was maintained. (CB) #39.3.81

Abeles, Francine F. Nineteenth century roots of quasideterminants. *Linear Algebra and its Applications* **435** (2011), 1019–1024. The author discusses 19th century precursors of the modern notion of quasideterminants, principally focusing on an 1851 paper by James J. Sylvester and an 1866 paper by Charles L. Dodgson. She then shows what these papers in turn owed to earlier work of Carl G.J. Jacobi. (DJM) #39.3.82

Archibald, Tom. Differential equations and algebraic transcendents: French efforts at the creation of a Galois theory of differential equations 1880–1910. *Revue d'Histoire des Mathématiques* **17** (2) (2011), 373–401. This paper considers the impact of Galois theory of solutions to polynomial equations on the development of the theory of ordinary differential equations in France in the late 19th and early 20th centuries, beginning with the work of Émile Picard in 1883, and continuing through the contributions of Ernest Vessiot, and Jules Drach, among others. See the review by Werner H. Schmidt in *Zentralblatt MATH* 05975726. (DJM) #39.3.83

Bioesmat-Martagnon, Lise. *Eléments d'une biographie de l'espace projectif* [*Elements of a Biography of Projective Space*] (*Collection Histoires de Géométries*). Nancy: Presses Universitaires de Nancy, 2010, 315 pp. A collection of six essays on the development and reception of the ideas of projective geometry. See the review by Jeremy Gray in *Historia Mathematica* **39** (1) (2012), 105–106. (DJM) #39.3.84

Boas, Harold P. Julius and Julia: Mastering the art of the Schwarz lemma. *American Mathematical Monthly* **117** (9) (2010), 770–785. A historical survey of the ideas and people involved with the Schwartz lemma, including Gaston Julia, Arnaud Denjoy, and Julius Wolff. See the review by William A. Cherry in *Mathematical Reviews* 2760379 (**2012d**:30063). (DJM) #39.3.85

Boucard, Jenny. Louis Poinsot et la théorie de l'ordre: un chaînon manquant entre Gauss et Galois? [Louis Poinsot and the theory of order: A missing link between Gauss and Galois?]. *Revue d'Histoire des Mathématiques* **17** (1) (2011), 41–138. An examination Louis Poinsot's contributions to number theory and algebra, with particular emphasis on his manuscript on the theory of permutations. The author discusses how Poinsot's work may shed light on the period between the publication of Gauss' *Disquisitiones Arithmeticae* and the seminal work of Galois. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1228.01015. (CH) #39.3.86

Brechenmacher, Frédéric. Auto-portraits avec Évariste Galois (et l'ombre de Camille Jordan) [Self-portraits with Évariste Galois (and the shadow of Camille Jordan)]. *Revue d'Histoire des Mathématiques* **17** (2) (2011), 271–369. A discussion of how subsequent mathematicians described, interpreted, and built upon the accomplishments of Galois, particularly in reference to the work of Camille Jordan. See the review by Leon Harkleroad in *Zentralblatt MATH* 1229.01120. (CH) #39.3.87

Cooke, Roger. A remark on Euclid's theorem on the infinitude of the primes. *American Mathematical Monthly* **118** (4) (2011), 355–358. In this brief article, the author revisits and updates a late 19th century application of finite abelian groups to the number of primes between the nth prime and the product of the first n primes. (DJM) #39.3.88

Craik, Alex D. D. The *Popular Lectures and Addresses* of William Thomson, Baron Kelvin of Largs (1824–1907). *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 50–55. An overview of the three-volume collection of Thomson's public lectures presenting scientific subjects to a popular audience. Includes a more detailed discussion of Thomson's 1887 lecture on ship waves. (PWH) #39.3.89

Deiser, Oliver. "In der Unvolkommenheit des ersten Conceptes". Die Entdeckung der Überabzählbarkeit der reellen Zahlen ["In the incompleteness of the first draft"—the discovery of the non-countability of the real numbers]. *Jahresbericht der Deutschen Mathemat-*

iker-Vereinigung **110** (4) (2008), 163–175. The article draws on the Cantor-Dedekind correspondence to show how the notion of the uncountability of the reals evolved in its early formulations. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1230.01017. (KP) #39.3.90

Del Latto, Anthony; and Petrilli, Salvatore. Algebraic formalism within the works of Servois and its influence on the development of linear operator theory. *Loci: Convergence* (January 2012), 9 pp., electronic only. DOI: 10.4169/loci003802. How Servois' failed attempt to construct a foundation for the calculus nonetheless helped shape modern mathematics. (JLB) #39.3.91

Despeaux, Sloan Evans. Fit to print? Referee reports on mathematics for the nineteenth-century journals of the Royal Society of London. *Notes and Records of the Royal Society of London* **65** (3) (2011), 233–252. This paper analyzes referee reports of mathematical papers submitted to the Royal Society of London from 1832 to 1900 and discusses the reviewers' activity of refereeing mathematics for the Royal Society during the 19th century. It also includes a variety of reports of mathematical papers aiming to illustrate the different fates of professionalization and politics that the referees weighed alongside the actual mathematics they were judging. See the review by Teodora-Liliana Rădulescu in *Zentralblatt MATH* 1230.01018. (LM) #39.3.92

Domoradzki, Stanisław. Teaching mathematical programs in annual reports of gymnasiums in Galicia [in Polish]. *Antiquitates Mathematicae* **3** (2009), 223–241. This article discusses the official part of the annual reports, the school programs published under the Austro-Hungarian monarchy. It focuses in particular on the teaching programs of gymnasiums in Galicia. (LM) #39.3.93

Domoradzki, Stanisław. Mathematical works in annual reports of gymnasiums in Galicia [in Polish]. *Antiquitates Mathematicae* **3** (2009), 243–261. This article presents a list of works concerning mathematics, teaching and the history of mathematics published under the Austro-Hungarian monarchy in the annual reports of gymnasiums in Galicia and discusses their importance in forming mathematical culture on the Polish lands in the second half of the 19th century and at the beginning of 20th century. (LM) #39.3.94

Ehrhardt, Caroline. Évariste Galois and the social time of mathematics. *Revue d'Histoire des Mathématiques* **17** (2) (2011), 175–210. The author examines the social and mathematical milieu in Paris during the 1820s and 1830s to show that Galois was treated much like other aspiring mathematicians of his time. Next, the author constructs a biography of Galois' text, *Mémoire sur les conditions de résolubilité des équations par radicaux*, tracing its readership and their interpretations of it. (DJM) #39.3.95

Fine, Benjamin; and Rosenberger, Gerhard. An epic drama: The development of the prime number theorem. *Scientia. Series A: Mathematical Sciences* (NS) **20** (2010), 1–26. The story of the prime number theorem on the asymptotic density of the prime numbers developed across the 19th century and involved work of Legendre, Gauss, Hadamard, and de la Vallée-Poussin. The authors aim to make this "epic drama" more accessible to a present audience. (DJM) #39.3.96

Flood, Raymond; Rice, Adrian; and Wilson, Robin, eds. *Mathematics in Victorian Britain*. Oxford: Oxford University Press, 2011, ix + 466 pp. With a foreword by Adam Hart-Davis. The book provides in 18 chapters a general survey of the mathematics in the Victo-

rian period in Britain. See the review by Roman Murawski in *Zentralblatt MATH* 1228.01018. (TBC) #39.3.97

Friend, Michèle. Boole: From calculating numbers to calculating thoughts, in #39.3.6, 172–179. On Boole's achievement in bringing together nine small ideas of logic to create an overall system where calculations operated on thoughts, not just numbers. (DJM) #39.3.98

Girón Irueste, Fernando M. *See* #39.3.99.

Girón Pascual, Rafael M.; and Girón Irueste, Fernando M. The mathematician José Andreś Irueste (1844–1920) and his environment. *La Gaceta de la Real Sociedad Matemática Española* **13** (2) (2010), 353–378. The authors discuss life and works of the mathematician J. A. Irueste in connection to the intellectual and political developments in Spain. See the review by R. W. van der Waall in *Zentralblatt MATH* 1230.01019. (LM) #39.3.99

Godoy, Luis A. The general theory of elastic stability at the end of the 19th century. *International Journal of Structural Stability and Dynamics* **11** (3) (2011), 401–410. Focusses on the work of G. H. Bryan at Cambridge in the late 19th century with emphasis on the general stability of rigid bodies and a series of papers on elastic stability. (DJM) #39.3.100

Goldstein, Catherine. Charles Hermite's stroll through the Galois fields. *Revue d'Histoire des Mathématiques* **17** (2) (2011), 211–270. Explores Hermite's interpretation of Galois' results, and his role in propagating them in the second half of the 19th century. (DJM) #39.3.101

Golovin, Alexander; Tarabarin, Valentin; and Tarabarina, Zinaida. Feodor Orlov 1843–1892, in Ceccarelli, Marco, ed., *Distinguished Figures in Mechanism and Machine Science. Their Contributions and Legacies. Part 2*. (*History of Mechanism and Machine Science* **7**) (Dordrecht: Springer, 2010), pp. 175–197. This paper is on the life and work of Feodor Orlov, who was one of the founders of the Moscow school of applied mechanics. He worked at Moscow University and at the Imperial Moscow Technical Secondary School, the predecessor of today's Bauman Moscow State Technical University. See the review by Teun Koetsier in *Zentralblatt MATH* 1229.01129. (LM) #39.3.102

Grattan-Guinness, Ivor. How influential was mechanics in the development of neoclassical economics? A small example of a large question. *Journal of the History of Economic Thought* **32** (4) (2010), 531–581. A detailed exploration of which portions of mechanics and calculus influenced the development of neoclassical economics, focused on the work of Cournot, Jevons, Walras, Edgeworth, Marshall, Pareto, Fisher, and Evans. See the review by Dean Rickles in *Mathematical Reviews* 2798113 (**2012c**:01007). (DJM) #39.3.103

Hart-Davis, Adam. *See* #39.3.97.

Hersh, Reuben; and John-Steiner, Vera. Refuge from misery and suffering. *The Mathematical Intelligencer* **30** (1) (2008), 22–26. On well-known mathematicians working in prison. (DJM) #39.3.104

John-Steiner, Vera. *See* #39.3.104.

Juzwiszyn, Jacek; and Krzywicki, Andrzej. Theory of elasticity in papers of Władysław Gosiewski [in Polish]. *Antiquitates Mathematicae* **3** (2009), 39–46. The authors present

Władysław Gosiewski's results on elasticity theory published in Polish in the period 1872–1876. (LM) #39.3.105

Korónski, Jan. Władysław Zajaczkowski (1837–1898) and his monograph on differential equations [in Polish]. *Antiquitates Mathematicae* **3** (2009), 47–64. The author presents a biography of Władysław Wojciech Zajaczkowski and information on the first Polish monograph on ordinary and partial differential equations. (LM) #39.3.106

Krzywicki, Andrzej. *See* #39.3.105.

Luquin, Francisco. Sobre dos no-descubrimientos matemáticos de P. L. Chebyshev [On two mathematical non-discoveries by P. L. Chebyshev]. *La Gaceta de la Real Sociedad Matemática Española* **11** (2) (2008), 279–289. Discusses two results closely connected to some of Chebyshev's favorite research (one linked to the Prime Number Theorem in number theory and the other involving an articulated mechanism inspired by James Watt's famous parallelogram linkage) and how it happened that it was not Chebyshev who found them. (KP) #39.3.107

Lützen, Jesper. Dirichlet and the flexibility of the new concept of function, in Andersen, H. B., et. al., eds., *The Way Through Science and Philosophy. Essays in Honour of Stig Andur Pedersen* (*Tributes* **4**) (London: College Publications, 2006), pp. 51–64. According to the author, Dirichlet was one of the first to absorb what became the modern notion of a function as a variable depending on another variable, rather than a relationship described by an analytic expression. See the review by Svitlana P. Rogovchenko in *Zentralblatt MATH* 1230.01020. (DJM) #39.3.108

Magnello, M. Eileen. Victorian statistical graphics and the iconography of Florence Nightingale's polar area graph. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 13–37. After an overview of the introduction of graphical methods for displaying quantitative information, the author documents Nightingale's research on public health, her development of the polar area graph, and the place of both in nineteenth-century British health reforms. (PWH) #39.3.109

Maligranda, Lech. Karol Hertz (1843–1904) – alumnus of the Warsaw Main School [in Polish]. *Antiquitates Mathematicae* **3** (2009), 65–87. The author discusses life and works of Karol Hertz, a Polish mathematician, pedagogue and journalist in natural science. (LM) #39.3.110

Mauersberger, Klaus. *See* #39.3.120.

Mawhin, Jean. Some direct and remote relations of Gauss with Belgian mathematicians. *Jahresbericht der Deutschen Mathematiker-Vereinigung* **112** (2) (2010), 99–116. The author discusses the direct relationship between Gauss and Adolph Quetelet (1796–1874) and the indirect relationship between Gauss and Charles Jean de La Vallée Poussin (1866–1962). See the review by Karin Reich in *Zentralblatt MATH* 1227.01022. (TBC) #39.3.111

Medvedeva, N. N. Constructive theory of partitions in the works of J. Sylvester [in Russian], in #39.3.1, pp. 393–398. #39.3.112

Moon, Francis C. *See* #39.3.120.

Naveira, Antonio Martinez. La curvatura de Riemann a través de la historia [Riemannian curvature throughout history]. *Miscelánea Matemática* **44** (2007), 29–52. A history of

Riemannian curvature from Riemann through the work of Lobachevskiĭ and Bolyai. The author stresses the interplay between mathematical and physics. See the review by Andrew Bucki in *Mathematical Reviews* 2782913 (**2012d**:53001). (DJM) #39.3.113

Oláh-Gál, Róbert. *See* #39.3.115.

Petrilli, Salvatore. *See* #39.3.91.

Potter, Michael; and Ricketts, Tom, eds. *The Cambridge Companion to Frege* (*Cambridge Companions to Philosophy*). Cambridge: Cambridge University Press, 2010, xviii + 639 pp. A collection of 14 chapters by experts detailing various aspects of Frege's philosophy, including background, life and work, detailed critical analysis of his work, and later receptions. See the extended review by Risto Vilkko in *Mathematical Reviews* 2789041 (**2012d**:03009). (DJM) #39.3.114

Rice, Adrian. *See* #39.3.97.

Ricketts, Tom. *See* #39.3.114.

Rosenberger, Gerhard. *See* #39.3.96.

Sándor, József; and Oláh-Gál, Róbert. On Farkas Bolyai's theorems on infinite series, and related developments [in Hungarian]. *Matematikai Lapok* **16** (2) (2010), 18–37. The paper gives a survey of Farkas Bolyai's work on infinite series and relates his results to those of Szász, Olivier, Burg, and Montucla. See the review by J. Németh in *Mathematical Reviews* 2797456 (**2012b**:40002). (DJM) #39.3.115

Schinzel, Andrzej. Number theory in papers of Polish mathematicians abroad [in Polish]. *Antiquitates Mathematicae* **3** (2009), 89–97. This paper discusses number-theoretical results of selected mathematicians of Polish descent living abroad in the 19th and 20th century, such as Axer, Ptaszycki, Sochocki, Staniewicz, and Żbikowski. (LM) #39.3.116

Stammbach, Urs. A letter of Hermann Amandus Schwarz on isoperimetric problems. *The Mathematical Intelligencer* **34** (1) (2012), 44–51. The story of the discovery of a booklet containing Schwarz's paper giving the first proof in the 3-dimensional case that the sphere has the smallest surface area among all bodies with the same volume. Tipped in the booklet was a letter dated January 28, 1884 containing important information concerning isoperimetric problems. In his discussion of Schwarz' paper the author weaves a fascinating history of the mathematicians who worked on these problems during that period. They include Jacob Steiner, Karl Weierstrass, Carl Friedrich Geiser, and Edvard Rudolf Neovius (along with their photos). A German transcription of the letter is in the Appendix. (FA) #39.3.117

Tarabarin, Valentin. *See* #39.3.102.

Tarabarina, Zinaida. *See* #39.3.102.

Uckelman, Sara L. Computing with concepts, computing with numbers: Llull, Leibniz, and Boole, in #39.3.6, 427–437. The author argues that Boole's development of an algebra of reasoning drew upon two strands of thought, one focused on "computation of concept symbols", as exemplified by Llull's *Ars Combinatoria*, and the other focused on "computation of number symbols", as exemplified by Leibniz and his arithmetization of language. (DJM) #39.3.118

Van Sickle, Jenna. The history of one definition: Teaching trigonometry in the US before 1900. *International Journal for the History of Mathematics Education* **6** (2) (2011), 55–70. Through the early 19th century, trigonometry was taught using the "line system": sine, cosine, etc. were specific line segments in a circle of radius *R*. By the end of the century it was taught using the "ratio system." The transition is examined in textbooks and debate. (CB) #39.3.119

Wauer, Jörg; Mauersberger, Klaus; and Moon, Francis C. Ferdinand Jakob Redtenbacher (1809–1863), in Ceccarelli, Marco, ed., *Distinguished Figures in Mechanism and Machine Science. Their Contributions and Legacies. Part 2*. (*History of Mechanism and Machine Science* **7**) (Dordrecht: Springer, 2010), pp. 217–245. This paper is on Ferdinand Redtenbacher, Professor and Director of the Polytechnical School in Karlsruhe and one of the main originators of mechanical engineering as a science in Germany in the 19th century. See the review by Teun Koetsier in *Zentralblatt MATH* 1229.01146. (LM) #39.3.120

Weintraub, Steven H. On Legendre's work on the law of quadratic reciprocity. *American Mathematical Monthly* **118** (3) (2011), 210–216. The author explains the development of Legendre's ideas on quadratic reciprocity over the course of his four major works on number theory. (DJM) #39.3.121

Wiesław, Witold. Former Polish texts from number theory [in Polish]. *Antiquitates Mathematicae* **3** (2009), 99–116. The author presents contents of texts from number theory written for the first time in Polish by Julian Bayer (1806–1872) and mentions lecturers of problems, now classified as number theory problems, at the Jagiellonian University. (LM) #39.3.122

Wiesław, Witold. Zygmunt Rewkowski (1807–1893) – vitae pars prima [in Polish]. *Antiquitates Mathematicae* **3** (2009), 117–135. This paper presents fundamental facts of the life and scientific activity of Zygmunt Rewkowski up to the closing of the Imperial University of Vilna. (LM) #39.3.123

Wilson, Robin. *See* #39.3.97.

Woods, John. MacColl's elusive pluralism. *Philosophia Scientiae* **15** (1) (2011), 205–233. Argues that some recent commentators have read too much into MacColl's pluralism, and subsequent neglect. (DJM) #39.3.124

See also #39.3.64.

20th century

Abeles, Francine F.; and Moktefi, Amirouche. Hugh MacColl and Lewis Carroll: Cross-currents in geometry and logic. *Philosophia Scientiae* **15** (1) (2011), 55–76. Hugh MacColl claimed to Bertrand Russell that reading Lewis Carroll's *Symbolic Logic* made him return to the study of logic after a long hiatus. The authors explore MacColl's engagement with Carroll's work. (DJM) #39.3.125

Accardi, Luigi. Quantum probability: New perspectives for the laws of chance. *Milan Journal of Mathematics* **78** (2) (2010), 481–502. A history of quantum probability. See the review by Paolo Rocchi in *Mathematical Reviews* 2781849 (**2012d**:81004). (DJM) #39.3.126

Adams, Rod. *An Early History of Recursive Functions and Computability from Gödel to Turing*. Boston: Docent Press, 2011, 297 pp. Elaborates on the progress of the definition of recursion from its use in describing addition to Turing Machines. Emphasizes the difference between λ-definability versus recursion. Supplements the reading with transcripts of original letters that express recursive ideas in their conceptual form. (SK) #39.3.127

Athreya, K. B.; and Ney, P. E. T. E. Harris and branching processes. *Annals of Probability* **39** (2) (2011), 429–434. A survey article on the contributions of T. E. Harris to branching processes in probability theory. (DJM) #39.3.128

Audin, Michèle; and Brasseur, Roland. Addendum à publier sous l'occupation I. *Revue d'Histoire des Mathématiques*, **15** (2009), 5–57. *Revue d'Histoire des Mathématiques* **17** (2011), 5–7. The authors add a note by Daniel Dugué to the material covered by the first author in the earlier article. See #38.1.115. (DJM) #39.3.129

Bart, Harm; Hempfling, Thomas; and Kaashoek, Marinus A., eds. *Israel Gohberg and Friends. On the Occasion of His 80th Birthday*. Basel: Birkhäuser, 2008, xiv + 324 pp. This book is dedicated to Israel Gohberg on the occasion of his 80th birthday. It includes reflections—by Gohberg and others—on his own mathematical activities and contributions of colleagues and co-workers, both from his time in the Soviet Union and in the West. To be found are letters, speeches, laudatios and reminiscences as well as biographical material such as a curriculum vitae, a list of publications, a list of Ph.D. students and information about honorary doctoral degrees. (LM) #39.3.130

Basbois, Nicolas. L'émergence de la notion de groupe d'homologie [The rise of the notion of homology group]. *Gazette des Mathématiciens* **127** (2011), 15–44. On the emergence of the idea of homology groups in the 1920s. The author considers the work of Emmy Noether, L. Vietoris, H. Hopf, W. Mayer, L. E. J. Brouwer, and P. S. Alexandroff. See the review by Oleg V. Ogievetsky in *Mathematical Reviews* 2791386 (**2012b**:55001). (DJM) #39.3.131

Ben-El-Mechaiekh, Hichem; and Dimand, Robert W. von Neumann, Ville, and the minimax theorem. *International Game Theory Review* **12** (2) (2010), 115–137. The article includes the first translation from the French of von Neumann's original announcement of his minimax theorem, and a discussion of the contributions of Borel's student Jean Ville in 1938 that von Neumann and Morgenstern used to improve von Neumann's original proof. The authors include translations of Ville's note and a commentary on it by Borel. (DJM) #39.3.132

Berndt, Bruce C. The chief accountant and mathematical friend of Ramanujan–S. Narayana Aiyar. *American Mathematical Monthly* **118** (9) (2011), 767–776. The author presents a short biography of S. Narayana Aiyar, a chief accountant at the Madras Port Trust office, where Ramanujan worked as a clerk in 1912–1914. Aiyar's mathematical contributions are also discussed as well as his personal and mathematical relationships with Ramanujan. (LM) #39.3.133

Bonato, Anthony; and Nowakowski, Richard J. Sketchy tweets: Ten minute conjectures in Graph Theory. *The Mathematical Intelligencer* **34** (1) (2012), 8–15. Ten important difficult conjectures that have sparked huge amounts of work on related concepts and problems, including Ramsey numbers and the Four Color Theorem, originating primarily in

the period 1943–1976 (three of the ten are undated) for finite undirected graphs, most with no multiple edges. An extensive bibliography is included. (FA) #39.3.134

Brasseur, Roland. *See* #39.3.129.

Bullynck, Maarten. *See* #39.3.138.

Carlé, Martin. *See* #39.3.138.

Chevalier, J.-M. C. Some arguments for propositional logic: MacColl as a philosopher. *Philosophia Scientiae* **15** (1) (2011), 129–147. On the philosophical reasoning that led MacColl to develop a propositional logic. (DJM) #39.3.135

Chorlay, Renaud. "Local-global": The first twenty years. *Archive for History of Exact Sciences* **65** (1) (2011), 1–66. The article studies the use of the terms and concepts "local" and "global" in the mathematics of (approximately) the first two decades of the twentieth century, and the changing nature of the dichotomy between them. See the review by Michael A. B. Deakin in *Mathematical Reviews* 2756029 (**2012b**:01010). (KP) #39.3.136

Csicsery, George. *Julia Robinson and Hilbert's Tenth Problem*. Produced and directed by Csicsery. Narrated by Danica McKellar, edited by Tal Skloot, music by Mark Adler. Oakland, CA: Zala Films, 2008, 1 DVD (54:10 min.). A documentary on the life and work of Julia Robinson. See the review by John W. Dawson Jr. in *Mathematical Reviews* 2789035 (**2012c**:01012). (DJM) #39.3.137

Danilova, V. I. *See* #39.3.160.

De Mol, Liesbeth; Bullynck, Maarten; and Carlé, Martin. Haskel before Haskell: Curry's contribution to programming (1946–1950), in #39.3.6, 108–117. On Curry's work on implementing inverse interpolation on ENIAC in 1946 and his subsequent theory of program composition. (DJM) #39.3.138

Demidov, S. S. Giuseppe Peano and the Russian mathematical society of his time [in Russian], in #39.3.1, pp. 30–45. #39.3.139

Dimand, Robert W. *See* #39.3.132.

Duda, Roman. On personal losses of Polish mathematics related to World War II [in Polish]. *Antiquitates Mathematicae* **3** (2009), 137–169. This paper discusses losses of Polish mathematics caused by events related to World War II, such as violent deaths, "natural" deaths, deportation or emigration. Each mathematician is provided with a short notice on his/her fate and either a bibliography or information where to find it. (LM) #39.3.140

Dudley, Richard. *Selected Works of R.M. Dudley* (*Selected Works in Probability and Statistics*). New York: Springer, 2010, xxiv + 481 pp. Edited by Evarist Giné; Vladimir Koltchinskii; and Rimas Norvaiša. A selection from more than 100 papers of the work of probabalist and statistician Richard Mansfield Dudley. The editors provide commentary to the papers along with the reprints of the original editions. (DJM) #39.3.141

Eberhardt, Frederick. Reliability via synthetic a priori: Reichenbach's doctoral thesis on probability. *Synthese* **181** (1) (2011), 125–136. Shows that Hans Reichenbach took a Kantian view of probability in his 1916 Erlangen doctoral thesis, *Der Begriff der Wahrscheinlichkeit für die mathematische Darstellung der Wirklichkeit*, and argues that the roots of his later insights can be seen in the early work. (DJM) #39.3.142

Erickson, LeAnn, dir. *Top Secret Rosies: The Female Computers of World War II*. DVD, running time 56:40. A documentary focused on four women, Doris Blumberg, Shirley Blumberg, Marilyn Wescoff, and Betty Snyder, who worked on computations of ballistic trajectories during World War II. See the review by Judy Green in *Notices of the American Mathematical Society* **59** (2) (2012), 308–311. (DJM) #39.3.143

Español González, Luis; and Martínez García, María Ángeles. Hacia la matemática abstracta: Tomás Rodríguez Bachiller (1899–1980) [Towards abstract mathematics: Tomás Rodríguez Bachiller (1899–1980)]. *La Gaceta de la Real Sociedad Matemática Española* **13** (4) (2010), 769–795. The authors present a survey around the life and work of the mathematician T.R. Bachiller in the context of intellectual and political developments in Spain. It also includes a list of Bachiller's publications. See the review by R. W. van der Waall in *Zentralblatt MATH* 1230.01022. (LM) #39.3.144

Fałda, Beata. *See* #39.3.180.

Felsch, Volkmar. *Otto Blumenthals Tagebücher. Ein Aachener Mathematikprofessor erleidet die NS-Diktatur in Deutschland, den Niederlanden und Theresienstadt* [*Otto Blumenthal's Diaries. A Professor of Mathematics from Aachen Suffers the NS-dictatorship in Germany, the Netherlands and Theresienstadt*]. Konstanz: Hartung-Gorre Verlag, 2001, 538 pp. Edited by Erhard Roy Wiehn. This is a very careful edition of the diaries of the German-Jewish mathematician Otto Blumenthal which he wrote in German between 1939 and 1943. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1228.01027. (TBC) #39.3.145

Freire, Olival. Quantum dissidents: Research on the foundations of quantum theory circa 1970. *Studies in History and Philosophy of Science. Part B. Studies in History and Philosophy of Modern Physics* **40** (4) (2009), 280–289. The author presents a collective biographical profile of a sample of physicists—Zeh, Bell, Clauser, Shimony, Wigner, Rosenfeld, d'Espagnat, Selleri, and DeWitt—who devoted themselves to the foundations of quantum physics circa 1970. (LM) #39.3.146

Frenkel, Victor Ya. *See* #39.3.149.

Fricke, Robert. *Die elliptischen Funktionen und ihre Anwendungen. Erster Teil: Die funktionentheoretischen und analytischen Grundlagen* [*The Elliptic Functions and Their Applications. First Part: The Function-Theoretic and Analytic Foundations*]. Berlin: Springer, 2011, xviii + 500 pp. A reprint by Springer of the first volume of Fricke's planned three-volume opus on elliptic functions intended for use as a textbook, originally published by Teubner in 1916. Part of the interest now is to see how the style and language have changed. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1230.01036. (DJM) #39.3.147

Giné, Evarist. *See* #39.3.141.

Giorgi, Giovanni Maria. Corrado Gini: The man and the scientist. *Metron* **69** (1) (2011), 1–28. A biography of statistician Corrado Gini (1884–1965) and an evocation of period in which he lived. (DJM) #39.3.148

Gorelik, Gennady E.; and Frenkel, Victor Ya. *Matvei Petrovich Bronstein and Soviet Theoretical Physics in the Thirties*. Basel: Birkhäuser, 2011, 209 pp. Translated by Valentina M. Levina. A reprint of the 1994 edition, this book examines the life and accomplishments of physicist Matvei Petrovich Bronstein within the broader context of Soviet society in the

1930's. See the review by Horst-Heino von Borzeszkowski in *Zentralblatt MATH* 1230.01030. (CH) #39.3.149

Gottschall, Christian. *See* #39.3.167.

Grattan-Guinness, Ivor. Was Hugh MacColl a logical pluralist or a logical monist? A case study in the slow emergence of metatheorising. *Philosophia Scientiae* **15** (1) (2011), 189–203. The author argues that both Bertrand Russell and Hugh MacColl were logical monists and that logical pluralism only began to emerge after MacColl's death in 1909. (DJM) #39.3.150

Hausdorff, Felix. *Gesammelte Werke. Band VIII: Literarisches Werk* [*Collected Works. Vol. VIII. The Literary Oeuvre*]. Vollhardt, Friedrich, and Roth, Udo, eds. Berlin: Springer, 2010, xx + 878 pp. Includes the poems, essays and other literary works published by Hausdorff in the first decades of the twentieth century under the pseudonym Paul Mongré. See the review by Volker Peckhaus in *Zentralblatt MATH* 1227.01042. (KP) #39.3.151

Hempfling, Thomas. *See* #39.3.130.

Hentschel, Ann M. *See* #39.3.152.

Hentschel, Klaus, ed. *Physics and National Socialism: An Anthology of Primary Sources.* Basel: Birkhäuser, 1996, ci + 406 + cv pp. Translated by Ann M. Hentschel. A reprint, without significant modifications, of the definitive collection of original texts relating to the role of physics in the Third Reich. The editor provides an extensive historical introduction, as well as careful annotations for each document. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1228.01054. (CH) #39.3.152

Irzk, Gürol. Hans Reichenbach in Istanbul. *Synthese* **181** (1) (2011), 157–180. The article draws on hitherto neglected Turkish sources to examine the life and work of the philosopher and logician Reichenbach during his time in Istanbul in the 1930s after fleeing the Nazi regime. (KP) #39.3.153

Ivanov, V. K. *Selected Scientific Works. Mathematics* [in Russian]. V. V. Vasin, ed. Moscow: FIZMATLIT, 2008, 552 pp. Contains selected mathematical works of Valentin Konstantinovich Ivanov (1908–1992), including articles on algebra and approximation of functions theory, inverse problems in potential theory and theory of functions of complex variables, ill-posed problems, and generalized functions. See the review by Irina V. Melnikova in *Mathematical Reviews* 2572414 (**2012a**:01022). (KP) #39.3.154

Jakóbczak, Piotr. Memorandum (1907) concerning the reform of teaching of mathematics in universities of the Austrian Habsburg monarchy [in Polish]. *Antiquitates Mathematicae* **3** (2009), 7–38. This article presents the memorandum (1907) concerning the reform of mathematics teaching in the universities of the Austrian Habsburg monarchy. (LM) #39.3.155

Kaashoek, Marinus A. *See* #39.3.130.

Kent, Deborah. Alice Bache Gould: Mathematician in search of war work, 1918. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 38–49. Provides some biographical background on Gould and describes her work during WWI, first for the US embassy in Madrid and later teaching navigational and mathematical skills to naval recruits at the University of Chicago. (PWH) #39.3.156

Khesin, Boris; and Tabachnikov, Serge, eds. Tribute to Vladimir Arnold. *Notices of the American Mathematical Society* 59 (3) (2012), 378–399. DOI: http://dx.doi.org/10.1090/noti810. The article includes a translation from Russian of an interview V. I. Arnold (1937–2010) gave to *Kvant* magazine in 1990 and memorial appreciations from Alexander Givental, Yakov Sinai, Steve Smale, Mikhail Sevryuk, Askold Khovanskii and Alexander Varchenko, and Michael Berry. (DJM) #39.3.157

Koblitz, Ann Hibner; Koblitz, Neal; and Menezes, Alfred. Elliptic curve cryptography: The serpentine course of a paradigm shift. *Journal of Number Theory* **131** (5) (2011), 781–814. An overview of the history of the application of elliptic curves to cryptography, focusing on the controversies over cybersecurity issues. See the review by Zlatko G. Varbanov in *Mathematical Reviews* 2772472 (**2012b**:14052). (KP) #39.3.158

Koblitz, Neal. *See* #39.3.158.

Koltchinskii, Vladimir. *See* #39.3.141.

Levina, Valentina M. *See* #39.3.149.

Maligranda, Lech. Eustachy Żyliński (1889–1954) [in Polish]. *Antiquitates Mathematicae* **3** (2009), 171–211. The author discusses the life and work of Eustachy Żyliński, a Polish mathematician who worked on number theory, algebra, logic, and foundations of mathematics and was part of the so-called Lwów School of Mathematics. (LM) #39.3.159

Malykh, A. E.; and Danilova, V. I. Talent to talent (on the 110th anniversary of the birth of P. Ya. Polubarinova-Kochina) [in Russian], in #39.3.1, pp. 363–381. #39.3.160

Marquis, Jean-Pierre. *From a Geometrical Point of View. A Study of the History and Philosophy of Category Theory* (*Logic, Epistemology, and the Unity of Science* **14**). Dordrecht: Springer, 2009, x + 309 pp. The step from set theory to category theory was arguably one of the most important philosophical developments in 20th century mathematics. Here, the author provides a detailed historical analysis and penetrating philosophical critique of the rise of category theory. See the review by R. H. Street in *Mathematical Reviews* 2730089 (**2012d**:18001). (DJM) #39.3.161

Martínez García, María Ángeles. *See* #39.3.144.

Menezes, Alfred. *See* #39.3.158.

Mermin, N. David. Understanding Einstein's 1905 derivation of $E = mc^2$. *Studies in History and Philosophy of Science. Part B. Studies in History and Philosophy of Modern Physics* **42** (1) (2011), 1–2. The author contends that H. C. Ohanian's recent claims of mistakes in Einstein's 1905 paper stem from a misunderstanding of Einstein's argument. (DJM) #39.3.162

Moktefi, Amirouche. *See* #39.3.125.

Ney, P. E. *See* #39.3.128.

Norvaiša, Rimas. *See* #39.3.141.

Nossum, Rolf. Emigration of mathematicians from outside German-speaking academia 1933–1963, supported by the Society for the Protection of Science and Learning. *Historia Mathematica* **39** (1) (2012), 84–104. Using the archives of the Society for the Protection of Science and Learning (SPSL), now at the Bodleian in Oxford, the author analyzes the

cases of those German-speaking mathematicians helped by the SPSL that fall outside the purview of Reinhard Siegmund-Schultze's recent book, *Mathematicians Fleeing Nazi Germany*: *Individual Fates and Global Impact* (See #37.2.130). (DJM) #39.3.163

Nowakowski, Richard J. *See* #39.3.134.

Peitgen, Heinz-Otto. Benoît B. Mandelbrot (1924–2010). *Science* **330** (6006) (2010), 926. In memory of Benoît B. Mandelbrot, who created fractal geometry and applied it to the study of patterns in nature on all scales and across diverse disciplines. (LM) #39.3.164

Penrose, Roger. *Roger Penrose Collected Works*. Oxford: Oxford University Press, 2011, 6 vols. The six volumes, spanning some 5000 pages, are divided chronologically and contain the work, other than books, of Roger Penrose from 1953 to 2003. Much of the material is previously unpublished or unavailable, such as the Twistor Newsletter articles. The original works are supplemented by the author's commentary. See the review by Peter R. Law in *Mathematical Reviews* 2742555 (**2012b**:01017). (DJM) #39.3.165

Rahman, Shahid. Some remarks on Hugh MacColl's notion of symbolic existence. *Philosophia Scientiae* **15** (1) (2011), 149–161. On how MacColl's treatment of existence and non-existence differed from the Frege-Russell approach. (DJM) #39.3.166

Ramharter, Esther; and Gottschall, Christian. Peirce's search for a graphical modal logic (propositional part). *History and Philosophy of Logic* **32** (2) (2011), 153–176. On modality in Pierce's existential graphs. (DJM) #39.3.167

Raussen, Martin; and Skau, Christian. Interview with John Milnor. *Notices of the American Mathematical Society* **59** (3) (2012), 400–408. DOI: http://dx.doi.org/10.1090/noti803. An in-depth interview of John Milnor on the occasion of his receiving the Abel Prize. (DJM) #39.3.168

Richards, Dana. Martin Gardner (1914–2010). *Science* **329** (5988) (2010), 157. In memory of Martin Gardner, the author of a variety of writings on mathematics, science, philosophy of science, theology, and magic. (LM) #39.3.169

Roquette, Peter. In memoriam Ernst Steinitz (1871–1928). *Journal für die Reine und Angewandte Mathematik* **648** (2010), 1–11. The article presents a thorough analysis of the impact that Steinitz' paper of 1910 on the algebraic theory of fields had upon the development of modern algebra. In van der Waerden's *Modern Algebra* Steinitz' work became known world wide. See the review by Karl-Heinz Schlote in *Zentralblatt MATH* 1226.01009. (TBC) #39.3.170

Schang, Fabien. MacColl's modes of modalities. *Philosophia Scientiae* **15** (1) (2011), 163–188. In this paper, the author argues that, while MacColl did introduce modalities that went beyond truth and falsehood, he did not introduce a full many-valued logic. (DJM) #39.3.171

Schweber, S. S. Weimar Physics: Sommerfeld's seminar and the causality principle. *Physics in Perspective* **11** (3) (2009), 261–301. Schweber gives a thorough investigation of the changes that the concept of causality underwent in the period 1918–1927. The reviewer states: "All in all, an interesting history is presented in readable and detailed analysis." See the review by Karl-Heinz Schlote in *Zentralblatt MATH* 1227.01025. (TBC) #39.3.172

Siegmund-Schultze, Reinhard. „Göttinger Feldgraue", Einstein und die verzögerte Wahrnehmung von Emmy Noethers Sätzen über Invariante Variationsprobleme (1918) ["Göttinger Feldgraue," Einstein and the delayed reception of Emmy Noether's theorems on invariant variational problems (1918)]. *Mitteilungen der Deutschen Mathematiker-Vereinigung* **19** (2) (2011), 100–104. A brief discussion, partially in response to a recent book by Yvette Kosmann-Schwarzbach, relating to the reception and transmission of Noether's 1918 article on invariant variational problems. The author focuses on what he asserts is a misunderstanding of the German term "Göttinger Feldgrauen" in a letter from Einstein, apparently caused by the inherent difficulty of translating irony from one language to another. See the review by Horst-Heino von Borzeszkowski in *Zentralblatt MATH* 1228.01030. (CH) #39.3.173

Siegmund-Schultze, Reinhard. Landau und Schur: Dokumente einer Freundschaft bis in den Tod in unmenschlicher Zeit [Landau and Schur: Documents of a friendship till death in inhuman times]. *Mitteilungen der Deutschen Mathematiker-Vereinigung* **19** (3) (2011), 164–173. A discussion of the personal and professional relationship between Landau and Schur in the period leading up to the Second World War. See the review by Teodora-Liliana Rădulescu in *Zentralblatt MATH* 1230.01025. (CH) #39.3.174

Siegmund-Schultze, Reinhard. Opposition to the boycott of German mathematics in the early 1920s: Letters by Edmund Landau (1877–1938) and Edwin Bidwell Wilson (1879–1964). *Revue d'Histoire des Mathématiques* **17** (1) (2011), 139–165. An examination of the wide-ranging opposition to the exclusion of German mathematicians in the aftermath of the First World War. See the review by Hans Fischer in *Zentralblatt MATH* 1230.01024. (CH) #39.3.175

Sinkevich, G. I. The history of an idea of Luzin: Vera Bogomolova and her theorem [in Russian], in #39.3.1, pp. 389–393. #39.3.176

Skau, Christian. *See* #39.3.168.

Smadja, Ivahn. Tuning up mind's pattern to nature's own idea: Eddington's early twenties case for variational derivatives. *Studies in History and Philosophy of Science. Part B. Studies in History and Philosophy of Modern Physics* **41** (2) (2010), 128–145. A detailed analysis of how Eddington's views evolved from strict objectivity to a more subjective approach in the early 1920s as seen through the changing role of variational deriviatives. See the review by Giovanni Preti in *Mathematical Reviews* 2652294 (**2012b**:58001). (DJM) #39.3.177

Springer, T. A. Armand Borel's work in the theory of linear algebraic groups, in Mehta, V.B., ed., *Algebraic Groups and Homogeneous Spaces. Proceedings of the International Colloquium, Mumbai, India, January 6–14, 2004* (*Studies in Mathematics. Tata Institute of Fundamental Research* **19**) (New Delhi: Narosa Publishing House/Published for the Tata Institute of Fundamental Research, 2007), pp. 1–11. A survey of Borel's work on linear algebraic groups, from his early collaborations at Zurich to his introduction of what would come to be known as "Borel groups" and his later collaborations, along with his work on related fields. See the review by Ubiratan D'Ambrosio *Zentralblatt MATH* 1219.01055. (KP) #39.3.178

Tabachnikov, Serge. *See* #39.3.157.

Wiehn, Erhard. *See* #39.3.145.

Wuczyńska, Krystyna. The Merano Program in Poland [in Polish]. *Antiquitates Mathematicae* **3** (2009), 263–285. This article discusses changes in teaching mathematics in 19th century Poland, focusing on the German Merano Program (1905), a reform introduced to Polish schools among a variety of other reforms. (LM) #39.3.179

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See also #39.3.64; #39.3.83; #39.3.93; #39.3.99; #39.3.104; and #39.3.116.

Reviewers

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